

**MULTIMEDIA**



**UNIVERSITY**

**STUDENT ID NO**

--	--	--	--	--	--	--	--	--	--

**TABLE NO:** \_\_\_\_\_

# **MULTIMEDIA UNIVERSITY**

## **FINAL EXAMINATION**

**TRIMESTER 2, 2017/2018**

**TIS2351 – HUMAN COMPUTER INTERACTION**

(All sections / Groups)

2nd MARCH 2018  
3.00 PM – 5.00 PM  
(2 Hours)

---

### **INSTRUCTIONS TO STUDENTS**

1. This question paper consists of 13 pages with 3 Sections only.
2. Attempt ALL questions in **PART A, PART B, and PART C**. The distribution of the marks for each question is given.
3. Please write all your answers in the answer box associated with each question in this question paper.

**PART A - TRUE/FALSE (10 MARKS).****Write down your answer in the answer box provided. (Write T or F).**

	<b>Answer</b>
Q1) The purpose of usability goal is to provide the interaction designer with a concrete means of assessing various aspects of interactive product and user experience.	<input type="text"/>
Q2) The notion of the user experience is central to interaction design.	<input type="text"/>
Q3) One of the benefits of conceptualizing the design space early on is that it allows close-mindedness, which means allowing the design team from becoming narrowly focused early on.	<input type="text"/>
Q4) When we talk about memory, we recall things much better than being able to recognize things.	<input type="text"/>
Q5) Perception is a cognitive process that enables us to be selective in terms of the mass of competing stimuli but limits our ability to keep track of all events.	<input type="text"/>
Q6) One of the benefits of conceptualizing the design space early is that it is a driving force that supports the chance of misunderstanding and confusion arising later on.	<input type="text"/>
Q7) Shareable technologies can be used to support co-located users.	<input type="text"/>
Q8) Smartboards are a kind of telepresence technology that allow more than one person to use them at the same time.	<input type="text"/>
Q9) Expanding menus enable more options to be shown on a single screen than is possible with a single flat menu.	<input type="text"/>
Q10) Multimedia can disable learning ability, understanding, lower engagement, and less pleasure.	<input type="text"/>

**To be continued...**

**PART B – MULTIPLE CHOICE QUESTIONS (10 MARKS).****Write down your answer in the answer box provided.**

- |   | <b>Answer</b>   |
|---|---|
| Q1) User-centered approach is based on _____:<br>A) Empirical measurement and waterfall design.<br>B) Iterative design and theoretical measurement.<br>C) Theoretical and empirical measurement.<br>D) Early focus on users and tasks, and empirical measurement.   | <div style="border: 1px solid black; width: 80px; height: 30px; margin: 0 auto;"></div> |
| Q2) In order to establish requirements, the three basic questions that need to be clear as follows:<br>A) What is the problem space? How can we solve the problem space? Why do we need to solve the problem space?<br>B) What are the functional and non-functional requirements? How can we achieve these functional and non-functional requirements? Why we need to achieve these functional and non-functional requirements?<br>C) What are we trying to achieve? How can we achieve this? Why we need to achieve this?<br>D) What is the design or product? How to design the product? Why we need to have this product? | <div style="border: 1px solid black; width: 80px; height: 30px; margin: 0 auto;"></div> |
| Q3) Externalization can be used for the following EXCEPT _____:<br>A) Reminds us of what to do.<br>B) Indicates priority of what to do.<br>C) Internally manipulates items into different orders or structures.<br>D) Carries out a computation.  | <div style="border: 1px solid black; width: 80px; height: 30px; margin: 0 auto;"></div> |

**To be continued...**

**Answer**

- Q4) According to the design implications of attention, designers need to consider the following aspects EXCEPT \_\_\_\_\_:
- A) Avoid cluttering the interface with too much information.
  - B) Use techniques that make things stand out like color, ordering, spacing, underlining, sequencing and animation.
  - C) Sounds should be audible and distinguishable.
  - D) Make information salient when it needs attending to.

- Q5) Efficiency is one of the usability goals that \_\_\_\_\_:
- A) Refers to the extent to which the product provides the right kind of functionality so that users can do what they need or what to do.
  - B) Refers to how easy a product is to remember how to use, once learned.
  - C) Refers to the way a product supports users in carrying out their tasks.
  - D) Involves protecting the user from dangerous conditions and undesirable situations.

- Q6) Three core characteristics of interaction are stated as follows EXCEPT \_\_\_\_\_:
- A) Users should be involved through the development of the project.
  - B) Ambiguous documentation is a necessary and submitted at the beginning of the project.
  - C) Iteration is needed through the core activities.
  - D) Specific usability and user experience goals need to be identified.

- Q7) Which of the following statement is true about interview?
- A) Unstructured interview is tightly scripted, often like a questionnaire; it is replicable but may lack richness.
  - B) Structured interview is not directed by a script, it is also rich but not replicable.
  - C) Semi-structured interview is guided by a script but interesting issues can be explored in more depth.
  - D) Focus group interview is one to one approach of interview.

**To be continued...**

**Answer**

- Q8) The following are pre-requisite to understanding problem space EXCEPT \_\_\_\_\_:
- A) Identifying usability.
  - B) Identifying UX goals.
  - C) Make explicit assumptions and claims.
  - D) Make implicit assumptions and claims.

- Q9) Which of the following is NOT a problem in conducting Heuristic Evaluation?
- A) Experts tend to have biases.
  - B) Users are involved; experts are not practical to be involved.
  - C) Experts are usually difficult and expensive to find.
  - D) Ethical issues need to be considered because users are involved.

- Q10) Which one of the following does not fall under inspections?
- A) Heuristic evaluation.
  - B) Cognitive walkthrough.
  - C) Predictive inspections.
  - D) Expert critiques.

**To be continued...**

**PART C - STRUCTURED (20 MARKS)**

**Write down your answer in the answer box provided**

**Question 1**

Read the scenario and answer the following questions.

**Writing and Transmitting a Prescription using a personal digital assistant (PDA).**

It is 2pm on Tuesday afternoon, Dr. Cameron has just completed her 4th patient check-up of the day and now wants to write a prescription for Charles Wilson, a 58-year-old male who regularly receives check-ups with Dr. Cameron in the hospital's GI unit.

Normally, Dr Cameron would have a pen and clipboard close by her side to fill in all the check-up and prescription information manually. However, the medical professionals working in the GI Unit have recently started using PDA's as means of improving the day to day operations in the unit and alleviating much of the paper based work that had previously caused so many problems.

Dr Cameron has only been using the PDA for 2 weeks but already feels extremely comfortable with the PDA and its ease of use. To create a patient prescription, she retrieves her PDA which is securely attached to her belt and inputs her password (**Fig. 1**) to gain access to her customised desktop. She then opens her "Patient Keeper" application (**Fig. 2**) and then searches for Mr Wilson through a simple drop down menu. The surname "Wilson" appears on the screen and she taps the "Submit Patient Name" button (**Fig. 3**). Three Mr Wilson's appear on the screen displaying forename, date of birth and patient ID number. Dr Cameron selects "Charles Wilson" from the list and clicks on the "Open Patient Records" button (**Fig. 4**) to show Mr Wilson's patient information. As Mr Wilson is a regular patient with Dr Cameron, "Patient Keeper" has automatically saved a record of all Mr Wilson's previous visits to the hospital, previous diagnosis and even his previous prescribed medications in a customised drugs list.

**To be continued...**

However, Dr. Cameron now wants to prescribe a new medication for Mr Wilson which she trusts will be of huge benefit in curing his problem. As the drug is new and will not be in Mr Wilson's customised drug list, Dr Cameron now presses the "Write Prescription" button which opens the preconfigured drugs list through a simple pull down menu to select the new medication.

Using the medications list, Dr Cameron has decided that she will treat the patient's problem by prescribing an ultra-strong, Prevacid Propionate 30mg tablet. She searches for Prevacid by entering the first letter of the drug in the search screen. The drug list automatically scrolls to Prevacid Propionate. Dr Cameron selects the 30mg tablet on the drop down menu and taps on the "Select Medication" button to continue.

Tapping this button displays a screen for dosing duration. Dosing duration can be in days, weeks or months. In Charles Wilson's case, the duration is 28 days.

The next screen (**Fig. 5**) involves Dr Cameron entering the prescription amount, refills and designated pharmacy of collection. Dr Cameron asks Mr Wilson his preferred pick-up pharmacy and then selects this from her customised list. After tapping the highlighted pharmacy name, then selecting "Select Pharmacy" on the PDA screen, Charles Wilson's prescription is complete, ready to be saved and then transmitted. Dr Cameron then selects the "Post Prescription" button and the prescription now begins transmission through the wireless network to Mr Wilson's pharmacy. A note appears on the PDA screen after 10 seconds stating "Prescription Post Successful".

Dr. Cameron then has the option to update Mr Wilson's patient history. She taps on "OK" and Mr Wilson's records are successfully updated, saved and synchronised with the GI Unit's patient database. Dr. Cameron then decides to print out a copy of the record update and also a copy of Mr Wilson's invoice.

**To be continued...**

The process of Dr Cameron writing and transmitting Charles Wilson's prescription on her PDA may well sound drawn out, but realistically she completed the process within 20-30 seconds. Her prescription was created with only a few strokes on her PDA.

As the scenario illustrates, Dr Cameron's treatment was improved and streamlined at the point-of-care by writing and transmitting her prescriptions electronically.

As a Human Computer Interaction researcher, you want to examine the scenario of this futuristic PDA.

Identify and name 5 functions of the futuristic PDA based on the proposed figures (Fig. 1 – 5) in the scenario and draw the interface sketches of those 5 functions. You also need to list out the key elements in the user interface [10 marks].

**To be continued...**



**Answer**

**To be continued...**

**Answer**

**To be continued...**

**Answer**

**To be continued...**

**Question 2.**

0. In order to fill vehicle with correct fuel:
  1. Drive the vehicle to the filling station.
  2. Select pump and park the vehicle.
    - 2.1 Park on side of filler.
    - 2.2 Check hose reaches the filler.
  3. Prepare vehicle.
    - 3.1 Switch off engine and lock the vehicle.
    - 3.2 Open filler flap/cap.
  4. Prepare pump
    - 4.1 Check required fuel is available.
    - 4.2 Check display reads zero.
    - 4.3 Note pump number.
    - 4.4 Select to pay at pump (if applicable).
  5. Fill vehicle with fuel.
    - 5.1 Remove nozzle from pump.
    - 5.2 Insert nozzle into filler port.
    - 5.3 Listen for pump to start.
    - 5.4 Pull trigger to pump fuel.
    - 5.5 Watch display until desired quantity is reached.
    - 5.5 Release trigger to stop pump.
  6. Reinstall systems.
    - 6.1 Identify pump used.
    - 6.2 Replace nozzle.
    - 6.3 Replace filler cap and close cap.
    - 6.4 Pay for purchases.
    - 6.5 Restart vehicle and leave forecourt.

Plan 0: ensure driver knows type of fuel required for particular vehicle before arriving at filling station. Plan 1: ensure driver attends to task as soon as filling station is approached. Plan 2: ensure driver locates correct pump before parking vehicle. If pump is where driver expects it to be. Plan 3: After visual confirmation nozzle will reach. Plan 4: If driver knows coding of pump to be able identify fuel provided. If pump is correctly coded. Do 4.1-4.2-4.3 and 4.4 if appropriate. Plan 5: If required fuel is available: do 5.1-5.2-5.3-5.4-5.5. Plan 6: Do 1-2 by checking color coding of nozzle matches holster. Then 6.3-6.4-6.5.

Express the textual Hierarchical Task Analysis (HTA) of actions involved in successfully fueling a light vehicle above, in a form of graphical representation. [10 marks]

**To be continued...**

**Answer**

**End of Page**